

# EXHIBIT B

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Re: Ruthanna Shirley et al. v. Washington State Department of Fish and Wildlife (“WDFW”) et al. Case, in response to expert report provided by Dr. John Lynch

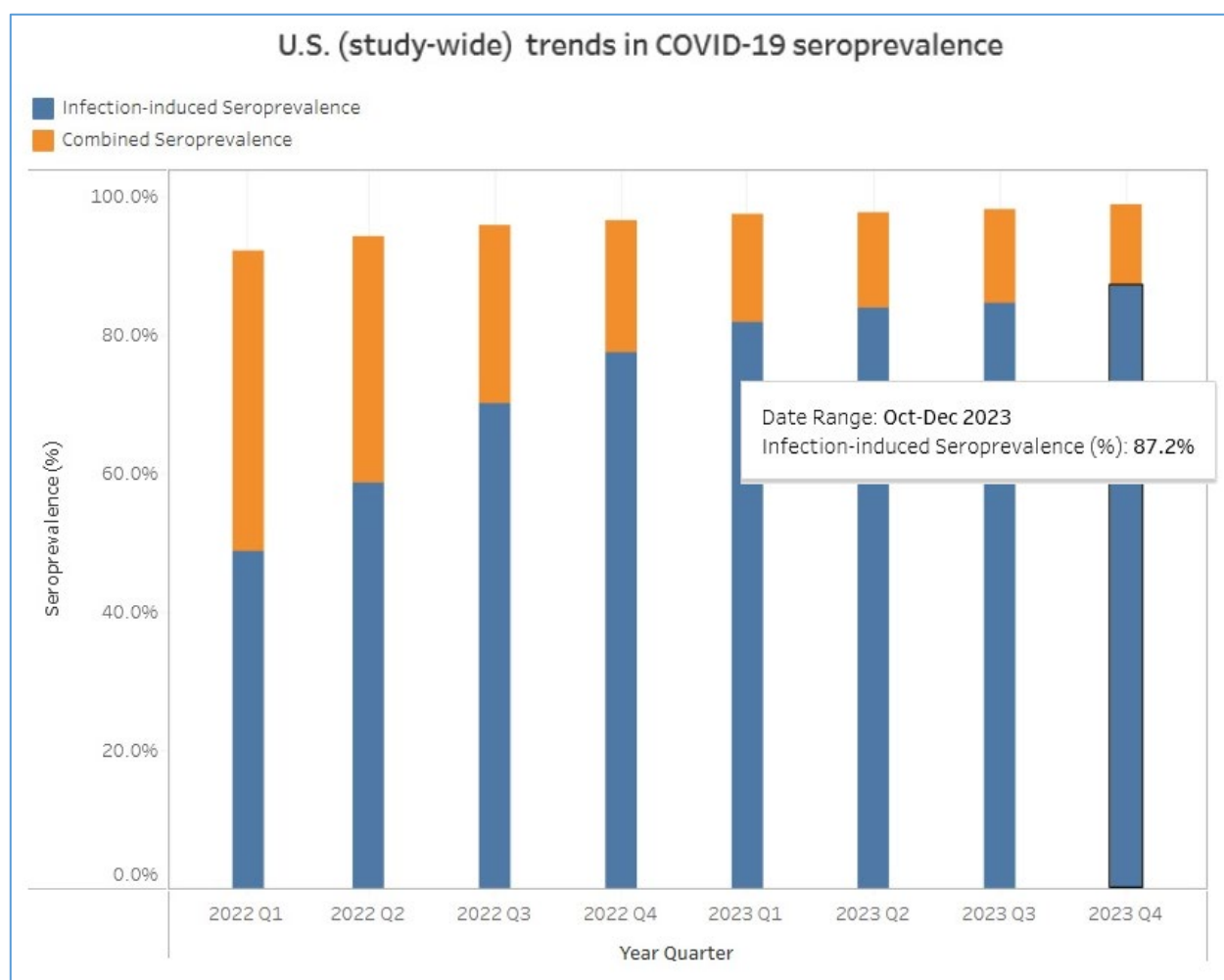
Dear Mr. Arnold:

I have compiled in the following discussion my initial thoughts and opinions regarding the Expert Report of Dr. John Lynch in the WDFW Case. The opinions I set forth herein are based upon my education and experience and my understandings of the relevant scientific literature, and I hold all of my discussions in this report to a reasonable degree of medical and scientific certainty. Discussions of my professional training and experience as an epidemiologist are fully laid out in my original report in this case and need not be duplicated here.

For background in the case, I start with some individual general scientific points of relevance as shown in sections below titled by headings. After that, I comment on the Lynch document noted. Paragraphs are numbered according to the numbers used by Dr. Lynch. I would observe that I have endeavored throughout to cite scientific materials that were available in the public domain or likely known to Defendants, including from the Washington State Department of Health which was generally responsible for managing the pandemic in the state, through October 18, 2021, the approximate date of Plaintiffs’ employment terminations. Some confirmatory materials after that date are cited, but my arguments in the case are generally based on information available prior to Plaintiffs’ terminations.

#### Background: Public Health Management of the Covid-19 Pandemic

On September 27, 2021, Washington Governor Jay Inslee issued Emergency Proclamation 21-14.2 ([https://governor.wa.gov/sites/default/files/proclamations/21-14.2%20-%20COVID-19%20Vax%20Washington%20Amendment%20\(tmp\).pdf](https://governor.wa.gov/sites/default/files/proclamations/21-14.2%20-%20COVID-19%20Vax%20Washington%20Amendment%20(tmp).pdf)), mandating Covid-19 vaccination for various classes of workers in the state. The motivation for the vaccine mandate stated in the proclamation was, “WHEREAS, COVID-19 vaccines are effective in reducing infection and serious disease, and widespread vaccination is the primary means we have as a state to protect everyone ... **from COVID-19 infections;**” [emphasis added]. However, by the end of 2023, [CDC reported](#) (see figure next page) that cumulatively more than 87% of Americans had been infected with Covid-19 in spite of the massive, prolonged and booster-repeated national vaccination campaign. This inevitable spread was predicted in summer 2021 (see calculations in next paragraph). My point is that by prioritizing numbers of infections rather than the more serious but less common consequences of both infections and policy harms, this and other vaccine mandate proclamation policies failed their main terms of reference in that more than 87% of Americans eventually became infected anyway.



### Background: Post-infection Natural Immunity vs Vaccine Immunity Against Covid-19

Most Covid-19 vaccination mandates, including the one issued by Governor Inslee, have ignored the role that post-infection “natural” immunity plays in helping to control the adverse consequences of the pandemic. With an organism of reproduction transmission  $R_0$  of approximately 3 (original strain) or more than 6 (Delta, and later, Omicron also) ([Kollmeyer, 2021](#); [Gallagher, 2021](#)), sustained natural and vaccine effectiveness against transmission would have had to remove infection susceptibility from some 83% or more people in the population (i.e.,  $1 - 1/6$ )—e.g., for vaccination to have indefinitely lasting efficacy against transmission above 90% in a population more than 90% vaccinated—in order to terminate the spread, and achieving these degrees of both vaccination uptake and vaccine performance were unrealistic during the pandemic. Thus, it was inevitable and apparent by the arrival of the Delta strain in summer 2021 that the overwhelming majority of the population would eventually get infected with the virus at some point. While post-infection population herd immunity likely slowed the spread, neither it nor vaccine immunity were ever able to control the spread of the infection overall. Nevertheless, that fact is not of policy consequence, because case count is not and should not have been the main public health priority—spread per se is not the issue—rather, the consequences of the spread and the negative consequences of the policies should have been the priorities.

Dr. Lynch and some others have argued that post-infection immunity may be less effective in controlling Covid-19 spread than post-vaccine immunity and may be shorter-lived than the latter. Of course, immunity to an infectious disease after survival from it has been known since the ancients, and post-SARS-CoV-2 infection immunity generates antibodies to a range of viral antigens, not just to the spike protein, the genetically coded active moiety in the mRNA vaccines. This is how antibody testing such as in the [figure](#) on the previous page is able to distinguish natural immunity (test results positive for both anti-nucleocapsid and anti-spike antibodies) from vaccine-based immunity (tests negative for anti-nucleocapsid antibodies but positive for anti-spike antibodies). Natural post-infection immunity generates a much wider range of antibody responses than vaccine immunity and thus would be expected to be as good if not better than vaccine immunity. However, determination of such performance is best left to empirical quantitative and comparison studies, as follows.

Mao and colleagues ([Mao et al., 2022](#)) carried out a meta-analysis of studies of reinfection risks in patients previously infected with SARS-CoV-2. This paper was published on-line December 13, 2021, but the 19 studies included in its meta-analysis had already been published through May 1, 2021. In that meta-analysis, among the followed cohorts totaling 325,225 people who had had Covid-19, 1,096 reinfections were noted, for a risk of 0.34% in the pre-Delta Covid-19 period. Three more studies of reinfections were published in April-June 2021 ([Letizia et al., 2021](#); [Vitale et al., 2021](#); and [Abo-Leyah et al., 2021](#)), one in November ([Kojima et al., 2021](#)) and a fifth in December ([Chemaitelly et al., 2021](#)), bringing the total reinfection risk estimate to  $1,242/372,368 = 0.33\%$ , about 1 in 300 post-infection individuals. Durations of follow-up in these studies were all greater than 90 days save one study, and a number of studies followed subjects for 4-6 months or more.

Confirming this, a later meta-analysis of reinfection studies ([COVID-19 Forecasting Team, 2023](#)) estimated that protection against ancestral, Alpha, and Delta reinfection averaged about 85% and lasted at this level for some nine months before starting to wane. Specifically for the Delta period, post-infection immunity conveyed an average of 82% reduced risk of reinfection, 85% reduced risk of symptomatic reinfection, and greater than 97% reduced risk of severe disease. This overwhelmingly reduced risk of severe disease is why post-infection natural immunity is such an important component of the proper public health management of the pandemic, the public good, as noted previously. I am not arguing that people should have sought to be infected in order to obtain post-infection immunity, but given that it was clear by mid-2021 that almost everyone would eventually get infected at some point, recognition of this fact should have played a practical role in the management of the pandemic.

Head-to-head comparisons of post-infection (reinfection) vs post-vaccination (breakthrough) infection risks have also been carried out. These studies properly have compared reinfection risks in unvaccinated individuals with breakthrough infection risks in people who have never had Covid-19. In a meta-analysis published on October 28, 2021 of seven previously published studies, largely in the pre-Delta period, risk of infection was reduced 1.86-fold for Covid-recovered vs vaccinated uninfected people ([Shenai et al., 2021](#)). In a CDC study published January 19, 2022, for the Delta period from July through November 2021, risks of both laboratory-confirmed Covid-19 infection and of Covid hospitalization were 2-4-fold greater in people vaccinated with no previous Covid-19 diagnosis, vs individuals unvaccinated but with previous Covid diagnosis ([León et al., 2022](#)). Also in the Delta period, a study of 92,000 people in Israel published August 25, 2021 found a 5.96-fold increased risk of previously uninfected breakthrough infection vs unvaccinated reinfection ([Gazit et al., 2021](#); [Gazit et al., 2022](#)). This study also observed eight individuals with Covid-related hospitalizations, all in the vaccinated group. Finally, in a large US study of Covid-19 emergency department/urgent care (ED/UC) encounters during the Delta period, protection was 85% (95% CI

81%-87%) for unvaccinated people with documented prior infection, vs 72% (95% CI 70%-74%) for 2-dose mRNA vaccination without documented prior infection ([Bozio et al., 2023](#)). Prior infection was also more protective than 2-dose vaccination in the Omicron period in this study. These studies clearly show that during the time leading up to the Washington state and WDFW vaccine mandates, having had Covid-19 was as or more protective against subsequent infection and against serious reinfection disease than vaccination without a previous Covid infection, and much if not all of this knowledge was public in that time frame. Documented fact of previous Covid-19 infection however was not included in the state vaccine mandate proclamation or in any reasoning therefrom about vaccination as the only invoked method to manage the pandemic.

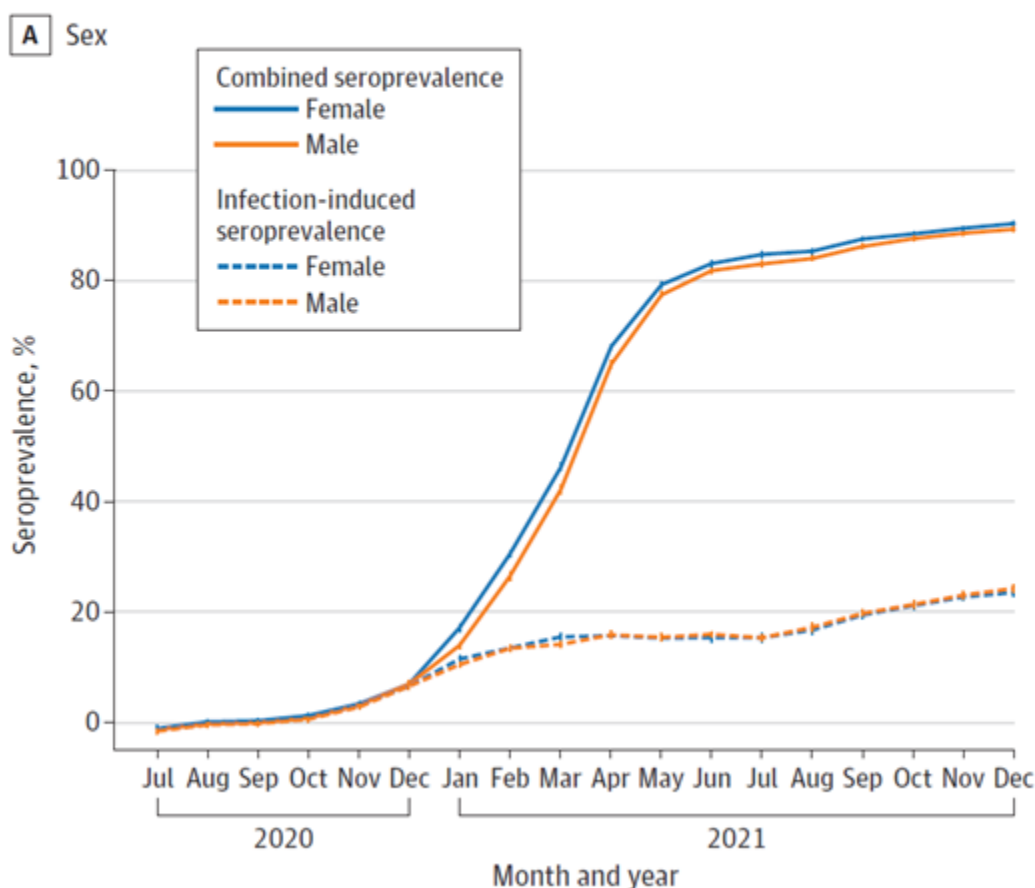
### Background: Breakthrough Covid-19 Infections as Vaccine Failure

First, I note what should be obvious, that any Covid-19 vaccine efficacy short of 100% means that some vaccinated people will still get the infection. At the beginning of the vaccine roll-out, the initial randomized controlled trial (RCT) studies of vaccine efficacy claimed them to be 94-95% effective against symptomatic infection ([Polack et al., 2020](#); [Baden et al., 2021](#)). These numbers imply that 5-6% of vaccinated people will get breakthrough infections, comparable to unvaccinated individuals. In later PR reports, the manufacturers reported “real-world” vaccine efficacies at 90-91%, or that about 10% of vaccinated people would get breakthrough infections. Even these efficacy claims were spuriously high, because these and other vaccine efficacy studies improperly did not attribute incident Covid-19 cases occurring within 7-21 days after vaccination to the vaccinated arm of the trial, and in some instances, they were attributed to the unvaccinated arm. In RCTs, adverse events should always be attributed to the arm of assignment no matter when they occur after randomization, even, for example, if before the trial intervention takes place. This mis-attribution leads to excessively high vaccine efficacy estimates, even when a vaccine may have no efficacy whatsoever ([Neil et al., 2024](#)).

Generally, the stated goals of Covid-19 vaccination mandates have in various instances been to prevent public exposures to the virus. However, vaccination mandate policies should have sought to attempt to prevent the substantial *transmission* of Covid-19 infection. Exposure to Covid-19 is not the same as transmission, and this is not a facile distinction. Exposure is only relevant to the degree that it results in transmission, but transmission is the crucial endpoint, for that is, by definition, the spread of the infection from an infected person to exposed susceptible individuals. By late 2021, about 90% of the general population had either had Covid-19 infection (about 25%) or had been vaccinated against it (another 65%; [Jones et al., 2022](#); figure, top of next page), thus for many if not most individuals, by that time, exposure per se would not have resulted in clinical infection, and thus not transmission.

Numerous factors affect the degree of Covid-19 transmission in workplace, educational and other public settings. In the absence of vaccination mandates, employees and others were still free to choose to be vaccinated, thus could have chosen to use vaccination as a method to prevent transmission to themselves. Contraindications to getting vaccinated against Covid-19 are rare. According to public [CDC guidance](#) at the time, the medical conditions putting people at high risk of adverse infection outcome are not contraindications to getting vaccinated. The only contraindication is “History of a severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a component of the COVID-19 vaccine.” Such reactions are estimated to affect about one person in 100,000 ([Blumenthal et al., 2021](#)). CDC also lists certain *precautions*: history of a *non-severe* allergy as above, or acute illness (which is a temporary precaution). The precaution “History of myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine.” is really a contraindication, but

**Figure 1. SARS-CoV-2 Seroprevalence by Census Region, Race and Ethnicity, Sex, and Age, US, July 2020-December 2021**



only against further Covid-19 vaccination.

The proper understanding therefore in the WDFW vaccine mandate is to what degree mandating vaccination, over and above recommending it and allowing employees to choose to be vaccinated, served to reduce transmission in a major, substantial way.

To my knowledge, by the latter half of 2021 and increasingly so, two doses of the Covid-19 vaccines in general use lost most of their ability to reduce risk of infection transmission ([Madewell et al., 2022](#)). In that period, the Delta variant of SARS-CoV-2 was the predominant strain in general circulation, overtaking Alpha and previous strains in May-June 2021 and then itself overtaken by Omicron strains in December 2021-February 2022 ([Christensen et al., 2022](#)). Both Delta and Omicron started with large waves of infection even with the degrees of population vaccination and post-infection immunity present at the times of their arrival.

Additional evidence that the Covid-19 mRNA vaccines were failing to suppress infection spread in the Delta period of 2021 is seen in the CDC blood donor infection seroprevalence data from that period ([Jones et al., 2022](#); figure above). The figure shows that the estimated cumulative fraction of Americans infected with Covid-19 (seroprevalence, dashed lines) was increasing through March 2021



but then started slowing as the vaccine rollout progressed, and it plateaued from March through July 2021. But then when Delta started to spread and became dominant, August through December 2021, infections were again rising like in September through December 2020, in spite of the large degree of vaccination uptake that had already happened by that point (about 65% of people, the difference between the dashed and solid lines in the latter half of 2021). These empirical CDC data provide important evidence that the vaccines did reduce infection risk in the first half of 2021, but also that they increasingly failed to do so in the second half of 2021.

In order to transmit the Covid-19 infection, a person must first be infected. That infection may or may not be recognized as symptomatic. Vaccine effects on getting symptomatic Covid-19 infection were studied by the manufacturers and in numerous post-marketing RCT studies. However, vaccine effects on infection transmission were explicitly not studied by the vaccine manufacturers in their RCT studies ([Terhes, 2022](#)). To clarify, I am referring to the effect of vaccination on infection source control, i.e., whether previous vaccination reduces the infected person's risk of secondarily transmitting the infection to others. Because of the requirement first to be infected, vaccine effects on transmission might seem to correlate with vaccine effects on infection risks, but they are not the same and require independent empirical data.

Appreciable amounts of empirical data have now demonstrated the Covid-19 vaccines' weakened performance in reducing secondary transmission during the second half of 2021. This is in part due to failures to stop post-vaccination breakthrough infections, and to weak ability to limit the intensity or infectiousness of breakthrough infections so that they are intrinsically less transmissible.

First, by the end of July 2021, CDC was already aware of and alarmed at the Covid-19 vaccines' inadequate performance in reducing transmission of the Delta variant, and made those observations public ([McMorrow CDC presentation slide, 2021](#)). At that time, there were increasing data and public knowledge that breakthrough infections were occurring in appreciable numbers.

Published July 31, 2021, infected persons with Covid-19 in the Delta period were found to have similar viral loads, whether or not they had previously been vaccinated ([Riemersma et al., 2021](#)). It was later observed that infected vaccinated individuals "clear[ed] detectable infections roughly 27% sooner than unvaccinated individuals" ([Puhach et al., 2023](#)). However, this fact cannot account for much of a workplace benefit of vaccination, because as the Puhach study shows (its figure 4), the effect of the vaccine is to shorten the viral load by about 2 days at the end of the infectious process. At this point, symptomatic and test-positive employees are largely isolating at home, so the clearance issue concerns risks of transmission at home but not much in the workplace.

On August 6, 2021, CDC posted an article ([Brown et al., 2021](#)) in its in-house journal, *Morbidity and Mortality Weekly Reports*, describing the large Covid-19 case outbreak that happened over the July 4 weekend in Provincetown, MA, where 74% of cases (n=346) were found in "fully vaccinated" persons. Some 90% of the case infection strains were identified as the Delta variant.

Also on August 6, 2021, CDC Director Rochelle Walensky publicly confirmed that persons who receive a Covid-19 vaccine and are totally asymptomatic can still pass on the virus to someone else, and that while the Covid-19 vaccine may [so she said] help regarding reducing the severity of the symptoms of those who catch Covid-19, "what they can't do anymore is prevent transmission." <https://www.youtube.com/watch?v=TKFWGvvlVLI> (August 6, 2021, CDC Director, CNN interview, timestamp 0:56 to 1:56).

Month	Cases Fully Vaccinated	Cases Partly Vaccinated	Total Cases Vaccinated	Cumulative Population Vaccinated
Apr 2021	31,754	104,783	136,537	60,098,934
May 2021	27,018	31,651	58,669	88,310,076
Jun 2021	36,366	14,084	50,450	106,187,806
Jul 2021	219,707	47,231	266,938	112,135,161
Aug 2021	588,827	158,797	747,624	116,720,587
Sep 2021	659,110	146,465	805,575	125,638,445
Oct 2021	384,672	52,092	436,764	130,808,622
Nov 2021	456,495	61,383	517,878	134,115,910
Dec 2021	2,701,465	266,736	2,968,201	139,768,554
<b>Total</b>	<b>5,105,414</b>	<b>883,222</b>	<b>5,988,636</b>	<b>139,768,554</b>

Starting April 2021, CDC was monitoring Covid-19 vaccine breakthrough cases. The monthly data from April through December 2021 were initially made [publicly available](#) October 21, 2021 (and still are). The table above provides the CDC data on numbers of breakthrough infections, along with the CDC's estimated monthly cumulative numbers of Americans receiving the Covid-19 vaccinations. By the end of 2021, almost 6 million vaccinated people had become infected according to these data.

This number comprises 4.3% of the 140 million Americans who had been vaccinated by that time. However, this number of cases is also likely a very large undercount, because CDC stopped documenting post-vaccine infections [at the beginning of May 2021](#) unless the person was hospitalized for Covid-19 or had died of it. Given that hospitalization and death involved a minority of all Covid-19 cases, including breakthrough cases—12% according to [CDC](#)—the breakthrough case risk among vaccinated people in this time period was very likely many-fold greater than the 4.3% estimated.

Thus, it is clear that at the time the Washington state and WDFW employee Covid-19 vaccine mandates were enforced in 2021, appreciable risks of breakthrough infections were evident, making the vaccines substantially imperfect for the supposed role of reducing infection risk, and data supporting this observation were publicly available at the time.

#### Background: General Comments on Covid Transmission Risks Among Vaccinated and Unvaccinated

During the pandemic, Washington State maintained a database for state employee vaccination tracking. The state vaccination report [https://ofm.wa.gov/sites/default/files/public/shr/COVID19/VaccinationReport\\_Jan122022.pdf](https://ofm.wa.gov/sites/default/files/public/shr/COVID19/VaccinationReport_Jan122022.pdf) provides these vaccination data as reported on January 12, 2022 (image next page: WDFW employee data graphically extracted from the pdf tables). At that time,



Agency Vaccine Verification DATA				
Agency	Headcount <sup>1</sup>	Vaccine Verification Rate (Tot HC) <sup>1</sup>	Adjusted Headcount <sup>2</sup>	Vaccine Verification Rate (Adj HC) <sup>2</sup>
DFW	1,900	96.84%	1,876	98.08%

Report provided by Office of Financial Management based on state agency submitted data.

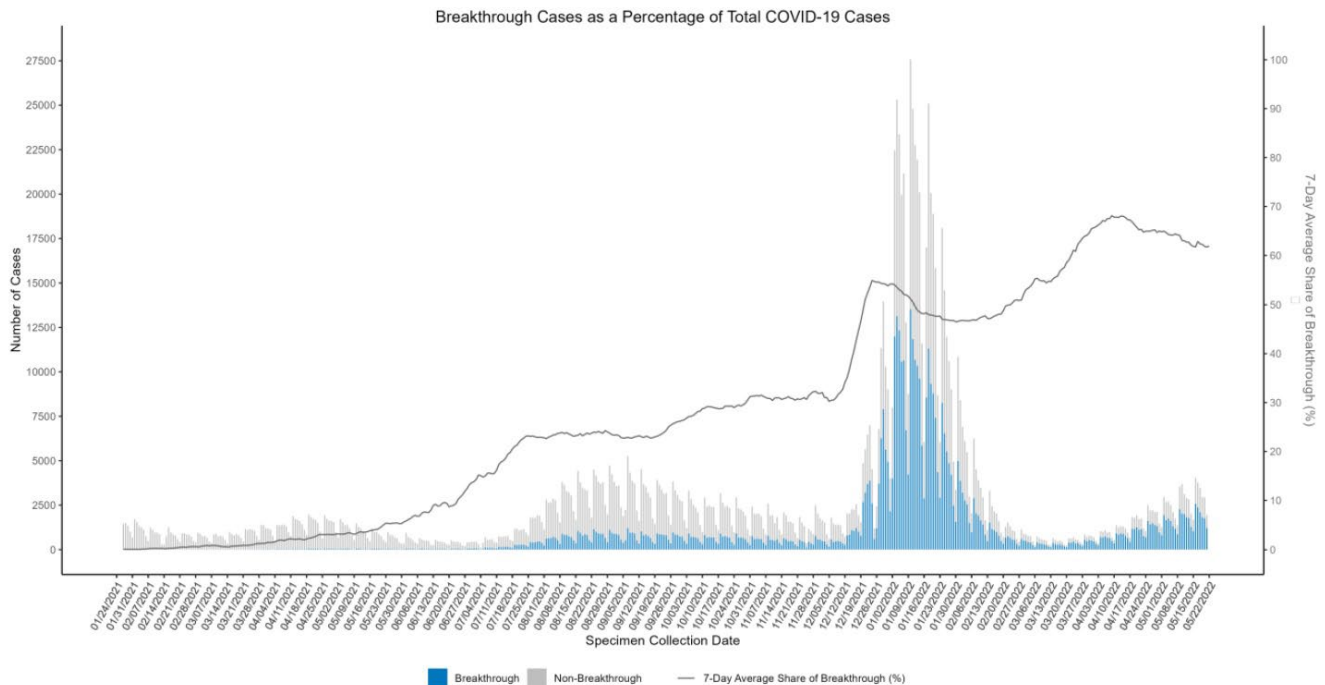
Report Release Date: January 12, 2022

these data show that 1,876 WDFW employees were subject to the vaccine mandate. Of these, 98.08% were vaccinated in compliance with the vaccine mandate, and 36 were unvaccinated and terminated. These unvaccinated thus comprised 1.9% of the WDFW employees.

Thus, among these 1,876 WDFW employees, the [CDC data](#) estimate that 4.3% of them, 81 in total, would have been expected to have had Covid-19 post-vaccination breakthrough infections, i.e., Covid-19 infections through vaccine failure during 2021. In comparison, of the 36 terminated unvaccinated individuals, 1.9% of the workforce, even if 100% of them had gotten Covid-19 during the same time period, the total infection load among these unvaccinated (n=36) would have been less than half the total infection load among the vaccinated (n=81). This is also consistent with the (at minimum) 5-6% breakthrough infection risk from the vaccine efficacy RCT studies.

Furthermore, Washington State Department of Health knew throughout the Delta period of the second half of 2021, that large numbers of Covid-19 breakthrough infections were occurring in vaccinated individuals in the state. The figure at the top of the next page shows that during this period, roughly 25% of all registered Covid-19 cases were breakthrough infections, more than 80,000 ([Washington State Department of Health, 2022a](#)). In addition: “From January 17, 2021 - January 1, 2022, there have been 123,365 vaccine breakthrough cases identified in Washington State. To date, more than 4.8 million people in Washington state are up to date on their vaccines. The breakthrough cases represent a small portion, about 2.5% of the vaccinated population.” ([Washington State Department of Health, 2022b](#)). While there has been some serious discussion about the poor and unreliable quality of Washington State Department of Health statistics ([Knopik, 2024](#)), the 2.5% breakthrough figure is reasonably comparable to the 4.3% estimated by [CDC](#) data, and larger than the 1.9% fraction of WDFW unvaccinated terminated employees.

Because of this very small potential infection load had all of the terminated employees just maintained their regular job positions, all assertions that the presence of unvaccinated staff in non-accommodatable positions would have reduced public and staff safety, are illogical, since breakthrough infections of the vaccinated staff, given their larger numbers, would have caused more public “unsafety” than infections among the unvaccinated. WDFW took no mandate measures to require booster vaccines for the vaccinated, thus institutional concerns about *vaccinated* staff causing Covid-19 “undue hardship” did not arise, even though vaccinated breakthrough infections comprised a larger infection load than infections that the unvaccinated might have had, had they not been terminated and had they been accommodated specifically by working in place in their usual jobs. Given that the breakthrough infection load of the vaccinated employees was not *undue* hardship—WDFW took it in stride without mandating boosters, and WDFW even hired replacement workers without mandating that they be vaccinated—the smaller infection load of these unvaccinated individuals had they not been terminated cannot be *inordinate* hardship.



I would also note that my discussions about the risk from infection load as a totality among vaccinated employees and among unvaccinated employees applies equally at the in-person interaction level, as probabilities. That is, a person coming in contact with a WDFW employee would be more likely to be exposed to a breakthrough infection in a vaccinated employee, than to an infection in a rare unvaccinated employee, had such employees just remained working in place in their usual jobs.

### Potential Risk Burden Posed by Plaintiffs

Plaintiffs were all granted religious exemptions, and a few were granted medical exemptions as well, but then all were refused accommodations and terminated. Even though most of the Plaintiffs’ job activities were carried on outdoors or by telework, Defendants asserted that meetings with supervisors (who were themselves presumably vaccinated) had to be done indoors, in-person, which therefore made the jobs non-accommodational by virtue of claimed excess risk to supervisors.

In my opinion concerning the degree of potential infection transmission risks associated with these jobs, I cite the [EEOC guidelines](#) for what EEOC calls reasonable accommodation (section L.3), which describes semi-quantitative examination of potential Covid-19 infection risks:

“An employer will need to assess undue hardship by considering the particular facts of each situation and will need to demonstrate how much cost or disruption the employee’s proposed accommodation would involve. An employer cannot rely on speculative or hypothetical hardship when faced with an employee’s religious objection but, rather, should rely on objective information. Certain common and relevant considerations during the COVID-19 pandemic include, for example, whether the employee requesting a religious accommodation to a COVID-19 vaccination requirement works outdoors or indoors, works in a solitary or group work setting, or

has close contact with other employees or members of the public (especially medically vulnerable individuals). **Another relevant consideration is the number of employees who are seeking a similar accommodation, i.e., the cumulative cost or burden on the employer.”** [emphasis added]

According to this standard, just the assertion that Plaintiffs posed excess Covid-19 infection risks is insufficient to establish the degree (i.e., the *undue*) of hazard. This falls into the category, speculative or hypothetical hardship, that the EEOC guidelines prohibit. The considerations enumerated in the above EEOC paragraph clearly set out to approximate the quantitative degree of risk posed by the unvaccinated employee in the accommodation role. Further, the “number of employees” and cumulative burden considerations explicitly include the total infection risk burden, exactly what I have quantitatively evaluated above according to CDC data and Washington State Department of Health data available around the time of WDFW’s implementation of the Washington State mandate Proclamation.

WDFW generally asserted that unvaccination of Plaintiffs created *undue* hardship but presented no quantitative evidence of such other than the assertion that unvaccinated people had higher risk. Because of the quantitatively small number of the unvaccinated terminated staff, the cumulative hardship would not have been *inordinate* compared to the larger breakthrough infection burden from the vaccinated staff. The majority of Plaintiffs had already had Covid-19 and presented documentation of their immunity status, which was ignored, for accommodation purposes, by Defendants in their claims that Plaintiffs posed unacceptable excess infection risks.

### **Expert Report of Dr. John Lynch in Support of Defendants**

6. Facts or Data Considered: “Proclamation 21-14.4 issued by the Governor of the State of Washington.”

This proclamation was issued on March 23, 2022, well after the events of this case had transpired. Dr. Lynch is retroactively applying proclamation details that were not in effect at the time of this case. I have relied upon Proclamation 21-14.2, issued September 27, 2021, as relevant to the case.

7. “COVID-19 is a disease that can result in serious illness or death.”

This is a generic hypothetical statement calculated to create anxiety, rather than a statement of scientific fact. In general, statement of how something “can” happen have no relevance to statements about the ways that things “do” happen. In my original case report, I cite evidence that the overall mortality for Covid-19 infection has been less than 0.1% across the age span, and that most of this mortality is concentrated in identifiable individuals who can be specifically addressed, rather than having to inflict major burdens on the great majority of the general public.

8. “there have been (and continue to be) many variants of the virus, with each new variant more infectious than those prior.”

This is not exactly true. As people's vaccine or post-infection natural immunity declines over time spans, viral variants do not necessarily need to be more infectious than previous ones in order to

successfully compete for new infections in the population. It is a dynamic trade-off between population resistance to infection and specifics of viral infectivity in people susceptible to infection, including people with degrees of immunity. Infectivity of new viral variants can go up and down but generally stays around an average level, as the virus maximizes its population niche reproduction success in the context of the infectiousness and virulence of symptoms that the virus creates. For respiratory infections, the optimal niche seems to be to make people symptomatic enough to spread the organism (coughing and sneezing), but not enough to make them so sick that they stay home and only infect their domestic co-residents. Omicron was the last mutant designated as a “strain” of the virus, in late 2021, and subsequent “substrains” circulating in the general population have all still been versions of Omicron. This is most likely because Omicron, with its generally milder symptoms, essentially maximized its reproductive fitness as a respiratory infection.

**8.** “A subset of those with severe disease will die. As of September 26, 2024, over 1.2 million people in the U.S. have died due to COVID-19. More than 16,200 have died in Washington State. Older adults and people of any age with certain underlying medical conditions are at higher risk for severe COVID-19 illness.”

This is a bland evasion of the fact that the great majority of deaths occurred in the identifiable group of elderly people with various specific comorbidities (obesity, diabetes, chronic heart or kidney disease, severe immunodeficiency, cancer, etc.).

**13.** “There was (and remains) wide consensus among public health officials that developing an effective COVID-19 vaccine was crucial to returning to some semblance of ‘normal life.’”

This is a statement about what people believe, not about how nature behaves. This statement ignores the large degree of post-infection natural immunity (>87% of Americans according to CDC) that returned at least that much of the population to “normal life.”

**18.** “The COVID-19 vaccines have been held to the same rigorous safety and effectiveness standards as all other types of vaccines in the United States.”

This statement is absurd. The vaccines never had any medium-term or long-term safety testing. Before approvals, they never had any transmission testing. They never had any carcinogenicity testing. The medium-term safety evaluations from the original RCTs were corrupted by the inappropriate vaccine uptake of the placebo groups. The vaccines available commercially in the US have only had EUA approvals not formal BLA approvals—the products that were BLA approved were not commercially released. The commercially available vaccines have substantial DNA fragment contamination, well exceeding FDA limits ([Kämmerer et al., 2024](#); [Wang et al., 2024](#)).

**21-23.** Efficacy of the Pfizer, Moderna and J&J Covid-19 vaccines.

These studies were misanalyzed as [Neil et al.](#) have shown, because of excluding or misattributing infections occurring within 7-21 days of vaccination.

**24.** “These positive clinical results held true in the real world after the EUAs were issued. In April 2021, Pfizer announced that its vaccine had 91.3% efficacy against COVID-19, based on how well it prevented symptomatic COVID-19 infection seven days through up to six months after the second

dose. ... Similarly, Moderna announced in April 2021 that its vaccine had greater than 90% efficacy against cases of COVID-19.”

These claims, though undermined by the [Neil et al.](#) arguments, nevertheless, allow that about 10% of vaccinated individuals would get breakthrough infections comparable to unvaccinated people.

**25.** “the only group for whom the Pfizer and Moderna vaccines (together, the “mRNA vaccines”) are currently contraindicated are those acutely allergic to their ingredients—specifically polyethylene glycol or polysorbate—which is estimated to occur in only 2.5 to 11.1 cases per 1 million doses.”

I thank Dr. Lynch for confirming my observation that contraindication to taking the Covid-19 vaccines is rare, about 1 in 100,000 people ([Blumenthal et al., 2021](#)). This means that virtually everyone in the population could have freely chosen to take the vaccines to protect him or herself.

**25.** “FDA later extended the authorization of all three COVID-19 vaccines for ... moderately or severely immunocompromised individuals.”

Same point as previous: such individuals were not contraindicated from taking the Covid-19 vaccines, at least according to the FDA and CDC.

**26-27.** Dr. Lynch states that FDA had approved the Pfizer and Moderna vaccines for the prevention of COVID-19 disease.

However, the references cited here are for EUA approvals, not for BLA approvals. The FDA did approve BLA applications for both vaccines, but stated that the BLA products were legally distinct from the EUA versions, and the BLA versions (Comirnaty and Spikevax) were never commercially released in the US, only the EUA versions.

**31.** “People should get vaccinated regardless of whether they already were infected with COVID-19 for several reasons.”

Inherent in this statement is the brazen denial of the importance of post-infection natural immunity. The overwhelming majority of the population was destined to get Covid-19 and this fact was observable in summer 2021. People did not seek to get the infection; it happened from exposures in everyday life. In my report, I cite some two dozen studies showing that post-infection natural immunity is on average at least as strong and durable as vaccine immunity, and that the great majority of these studies had been published prior to the mandate Proclamation. Thus:

**31:** “First, research has not yet shown how long a person who had COVID-19 will be protected from getting COVID-19 again after recovery.”

Untrue. [Mao et al.](#) meta-analysis of 19 studies, all individually published prior to July 2021. Studies by [Letizia et al., 2021](#); [Vitale et al., 2021](#); and [Abo-Leyah et al., 2021](#) (April-June 2021); [Kojima et al., 2021](#) (November 2021) and [Chemaitelly et al., 2021](#) (December 2021).

Then comparisons studies: meta-analysis of [Shenai et al., 2021](#) (7 studies); [León et al., 2022](#); [Gazit et al., 2021](#). Later studies in 2022 and 2023 also confirmed these earlier findings, that immunity from natural infection is as strong as and as long-lasting as vaccine immunity, if not more so.

**31:** “But the amount of protection that these individuals have against the virus varies from person to person and wanes over time.”

Natural immunity lasts for at least for 9 months at a very high levels ([Covid-19 Forecasting Team, 2023](#)). Vaccine immunity also declines substantially with time, but this vaccine mandate did not require booster doses, so singling out natural immunity and ignoring vaccine immunity is pure cherry picking. I note that the [Covid-19 Forecasting Team paper](#), though published in 2023, was a review paper and included eight studies on the Delta strain, of which some were published in 2021.

**31:** “Individuals who have had COVID-19 might have some antibodies even after their infection has passed that provide protection against COVID-19.”

The 24 studies that I cite just above provide empirical data for a total reinfection risk estimate of  $1,242/372,368 = 0.33\%$ , about 1 in 300 post-infection individuals. This is essentially the empirical, factual opposite of Dr. Lynch’s assertion, “might have some antibodies even after their infection has passed.”

**32:** “Second, studies show that being fully vaccinated provides better protection as compared to having recovered from COVID-19. A CDC study of individuals with previous COVID-19 infections through June 2021 found that those who were unvaccinated had 2.34 times the odds of reinfection compared with those who were fully vaccinated.”

Here Dr. Lynch is cherry picking the one outlier (and heavily criticized) study and ignoring the 11 studies I cited above, showing that post-infection natural immunity is as strong and long-lasting as vaccine immunity. Cherry picking one convenient study against a literature of numerous opposing studies does not seem like an honest way to do science, because it is inherently representing the one cherry-picked study as representative of the literature, whereas the actual literature in this instance is opposite to the one study cited by Dr. Lynch.

**33:** “Other studies have found stronger immune response with vaccination after infection with COVID-19 [than after Covid-19 infection alone].”

This point is completely irrelevant. No Covid-19 vaccine mandate including WA state has required any higher level of immunity beyond that accomplished by vaccination alone. It doesn't matter whether adding natural immunity gives more immunity. That is illogical.

**35 (and 36):** “The CDC and FDA do not recommend that people use antibody or serology tests, which look for antibodies from a previous infection or from vaccination, to assess the need for vaccination in an unvaccinated person or assess immunity to SARS-CoV-2.”

This statement is a red herring. Post-infection natural immunity is as good or better than vaccine immunity in preventing subsequent infection. The only question for either type of immunity is how to document its existence. Vaccine cards and electronic health records do this for vaccine immunity. Recorded PCR test positivity and serum antibody positivity (not antibody levels per se) document having had Covid-19 infection. Documented having had Covid provides the evidence of immunity, not measuring circulating antibodies and showing any particular level.



**36:** “Having a positive [antibody or T-cell test] result indicates only that there is a high likelihood that the person was infected at some time in the past. It does not imply that the person has any protection from subsequent infection.”

Exactly the same reasoning applies to vaccine immunity. A person might have been 2-dose vaccinated in December 2020 and would still be considered as satisfying the vaccine mandate on October 18, 2021, no matter how much the circulating antibody level had dropped in the meantime.

**37:** “Someone who would rather get infected with SARS-CoV-2 and subsequently develop COVID-19 as a means to developing some level of temporary immunity would not be making a rational choice from a public health perspective.”

I said explicitly in my report that I do not advocate for intentional infection, and as well that this point is irrelevant in the context of what actually transpired during the pandemic. Hundreds of millions of Americans got Covid-19. They got Covid by living their lives, not by going out to seek infection. There is no rational reasoning that finds benefit in not accounting for this degree of post-infection natural immunity in public health management of the pandemic. This whole paragraph is a red herring.

**38:** “All these issues outweigh any infection-mediated immunity benefits.”

Dr. Lynch—but no one else—is entertaining the straw-man argument that people would a priori seek out Covid infection in order to derive “infection-mediated immunity benefits.” I and all rational people argue post-hoc, that the very large number of people who have already had Covid and thus who have immunity at least as strong and as long-lasting as vaccine immunity, have demonstrated by the fact of having had Covid-19 that they are as or more protected as people who have chosen to be vaccinated.

By the time of the Washington state vaccine mandate proclamation date, October 18, 2021, approximately 20% of the US population had had Covid-19 (figure above, page 5), some 67 million people. The great majority of them were still highly immune to the infection.

**39-52:** Alternatives to vaccination such as regular testing, distancing, air-flow barriers.

I agree with Dr. Lynch that these approaches have not substantially reduced the spread of Covid-19. But then again, the Q4 2023 CDC seropositivity data (figure above, page 2) show that neither has vaccination reduced the spread of Covid-19. Almost everybody has had Covid-19 by now.

**41:** “Researchers from the Yale School of Public Health estimated by the end of June 30, 2021, COVID-19 vaccines prevented nearly 280,000 deaths and 1.25 million hospitalizations in the United States. By December 2021, those estimates increased to vaccines preventing over 1 million deaths and 10 million hospitalizations in the United States.”

These cited studies were modeling studies, not empirical analyses. They used parameter values such as for vaccine efficacy that did not reflect declining efficacy over time, and that overestimated the degree of vaccine efficacy because of the improper case categorization in the studies from which the values were taken ([Neil et al., 2024](#)). These modeling studies also did not adequately evaluate serious adverse events caused by the vaccines, because such data were largely suppressed at the time

in order to be able to portray the vaccines as safer than they were so as to accomplish greater vaccine uptake by the public.

Also, the vaccines commercially distributed in the US were never authorized by FDA for use to prevent hospitalizations or deaths. The [specific language](#) stated in the EUA was, “The Pfizer-BioNTech COVID-19 Vaccine covered by this authorization will be ... used only to prevent COVID-19.” The EUA language specifically reflects only efficacy data on infection risks in participants taking the vaccine or placebo injection in the original RCT, thus the EUA approval does not extend to use to prevent spread of infection to other people, nor to prevent hospitalization or mortality, as no data for any of these endpoints were considered by FDA in the EUA applications.

**54:** “In the period leading up to December 2021, in King County unvaccinated persons were 4.5x more likely to test positive for COVID-19 than fully vaccinated persons, 32x more likely to be hospitalized, and 40x more likely to die. ... This was likely because COVID-19 vaccines provided strong protection against infection during the Delta phase, with vaccine efficacy rates up to high 80s%.”

The validity of the Washington Department of Health Covid data has been strongly criticized ([Knopik, 2024](#)). Vaccine efficacy studies have been substantially biased upwards because of the initial-period exclusion problem ([Neil et al., 2024](#)). Finally, the CDC seropositivity data and Washington state Department of Health Covid case data (cited above, pp 5 and 8) show that vaccination of a majority of the US population by then (some 65%) did not seem to slow the spread of the Delta strain. These facts contradict Dr. Lynch’s claim of vaccine effectiveness against becoming infected in that period.

**56:** “At the time of the State Proclamation [October 18, 2021], data also suggested that vaccination offered higher protection than previous COVID-19 infection.”

This assertion is completely untrue. The CDC report cited here cherry picked its references. There were 8 studies published in 2021 comparing vaccine immunity to post-infection immunity: [Shenai et al., 2021](#) (7 studies); and [Gazit et al., 2021](#). These studies showed the opposite of what Dr. Lynch is claiming, risk of infection was reduced 1.86-fold for Covid-recovered vs vaccinated uninfected people ([Shenai et al., 2021](#)), and reduced 6-fold in the [Gazit et al.](#) study.

**58:** “Though breakthrough infections increased with the Omicron variant, the vaccines, particularly with booster doses, remained highly effective in preventing severe illness caused by Omicron. For example, the World Health Organization held a virtual meeting on March 15, 2022, to review evidence from several studies that assessed COVID-19 vaccine effectiveness against severe Omicron disease using several outcome definitions. After reviewing those studies, the researchers concluded that “current vaccine formulations continue to have utility in preventing the most severe forms of diseases.” Multiple other studies have found similar results.”

What is missing here is the observation that this WHO review did not examine vaccine performance in preventing virus transmission. WHO moved on to reviewing prevention of severe consequences of infection, because the empirical evidence by then had shown that the vaccines did not appreciably prevent transmission or infection. Preventing consequences of infection is a medical decision for individuals to make in choosing whether or not to take the vaccines, not one for

companies or the state to enforce by mandate. The state interest is in preventing spread, which the vaccines were then failing to do.

**59:** “Over time, researchers have also updated the vaccines to respond to new variants. In the fall of 2022, new bivalent boosters were introduced that were dramatically more effective at reducing severe COVID-19 cases involving the Omicron variants.”

The booster doses in general provided only a few weeks of benefit against subsequent infection before failing. The [Shrestha cohort study](#) of 50,000 Cleveland Clinic employees however showed that risk of Covid-19 infection significantly increased with each subsequent booster dose, not decreased. A similar inverse dose-response finding was seen in a study in Japan ([Nakatani et al., 2024](#)). In any event, booster doses were not required under the state mandate Proclamation, and fall of 2022 was well after the events of this legal case had transpired.

**60:** “It is important to remember that much of what we know now about the virus and the disease was unknown at the time the Proclamation was announced. In 2020 and early 2021, it was unclear exactly how the virus was transmitted and what mitigations, aside from vaccination, were the most effective.”

The vaccine mandate was enforced in October 2021, not early 2021. Washington state and EEOC guidelines required use of the most recent scientific information available to make policy decisions. Washington State Department of Health clearly knew about the very large scale of vaccine breakthrough infections occurring in summer-fall 2021 (chart on page 8 above, showing about 20-25% of all Delta Covid-19 infections in that period were breakthrough infections, about 500 breakthrough infections per day in the state), but this knowledge did not affect considerations for the October-deadline vaccine mandate proclamation.

**62:** “what we did know in 2021 and 2022 (and what is still true) is that vaccines offer protection against transmission.”

I have discussed this at length in my original report and above. In brief: the vaccine rollout was associated with reduction in infections in the first half of 2021 but failed to suppress transmission in the second half of 2021 ([Jones et al.](#) CDC seropositivity data) and in 2022-2023 ([CDC seropositivity data](#)). Thus, the vaccines likely did reduce transmission in the first half of 2021, but have not done so since that time. [Madewell et al., 2022](#) also shows that two doses of the mRNA vaccines did not reduce risk of secondary transmission in the Delta and Omicron periods.

**63:** “Vaccination against COVID-19 is fast (each dose takes about 20 seconds to administer), extremely safe, and highly effective at preventing transmission of the virus.”

Dr. Lynch has not examined or provided any analysis of vaccine harms, unlike reports by [Ed Dowd](#), US and European insurance companies, and [Naomi Wolf's](#) examinations of the massive internal documents on serious adverse effects of the Pfizer and Moderna vaccines. His opinion about vaccine effects on preventing virus transmission is contradicted by the [CDC data](#) showing that by the end of 2023, more than 87% of Americans had gotten Covid-19 in spite of the massive prolonged and repeated booster vaccination campaign. With almost all Americans getting Covid-19 at some point, it is apparent that the vaccines did not prevent the spread of the infection.

**63:** “No other public health strategy could effectively meet Washington Department of Fish and Wildlife goals of maintaining critical governmental services and operations while protecting the health, safety, and well-being of its employees, customers, and the public at large.”

This statement is contrary to public health principles of weighing the costs and benefits of every intervention and policy. It says only that this one plan of mandating vaccination would be suitable, but to what quantitative end? There is no discussion of the degree to which infection transmissions would be reduced and how much breakthrough infection load would occur. There is no recognition of the role that post-infection natural immunity could beneficially contribute. Thus, there is no understanding of the fact that Covid-zero would not be accomplished and what that would mean for policies.

**64-76: Vaccine Hesitancy and Misinformation.**

This is irrelevant to reasoning in the present case about scientific evidence of risks in the context of religious exemption and accommodation.

**67:** “Importantly, the choice to remain unvaccinated impacts not only the health of the person making this decision, but having more unvaccinated people in the population also increases the risk of infection for all people, vaccinated and unvaccinated.”

This assertion is referenced by a modeling study in CMAJ (and later, PLoSOne) by David Fisman and colleagues at the University of Toronto. The study publication caused a very large response of critical letters to the journal by numerous public health scientists, and it was fully debunked in the book, [Fisman's Fraud](#), by PhD statistician Dr. Regina Wateel.

**68:** “It’s like refusing to wear one’s seatbelt just because some people still get injured in car accidents even when they are wearing their seatbelts.”

This is a completely inappropriate analogy. The correct analogy is whether I have to put large rubber bumpers on the front and back of my car because 1 in 100,000 drivers (Dr. Lynch's estimate of people with contraindications to the Covid-19 vaccines according to CDC) doesn't or can't wear seatbelts and needs my protection.

**69:** “Later studies have found not only a reduced risk of infection and reduced severity of symptoms once infected, but also lower viral loads for both the Delta and Omicron variants.”

Dr. Lynch cherry picks one 2022 study by Thompson et al. about viral loads, when this question was reviewed in meta-analysis by [Puhach et al.](#) in 2023, showing the main difference was in the duration of infectivity, largely at the end of infection.

**70:** “Some people believe that if they observed vaccinated co-workers testing positive for COVID-19 (e.g., during the Omicron waves in late 2021 and early 2022), that means that either unvaccinated persons are at no greater risk for getting and transmitting COVID-19, or that vaccines do not work.”

This is both a strawman and Manichaeian argument. It does not matter that unvaccinated workers might be at greater risk of Covid-19 than vaccinated ones, because the determinative question is the cumulative infection burdens in the two groups, vaccinated and unvaccinated, and thus the proportion

of unvaccinated workers, along with the quantitative risk of breakthrough infections in vaccinated workers. The vaccines likely did work appreciably in the first six months of 2021 but efficacy against infection declined substantially in the second half of 2021 and thereafter. The vaccines might still have worked “somewhat” but obviously not well enough. The crude statement that “vaccines do not work” is too crude to be of scientific relevance or utility.

**70:** “By the end of 2022, COVID-19 vaccines prevented 18.5 million COVID-19 hospitalizations and 3.2 million deaths in the U.S. alone. Attached hereto as Exhibit F is a true and correct copy of the CDC’s Oct. 20, 2023, Morbidity and Mortality Weekly Report.”

These modeling results are controversial. Aside from that, 99,999 people out of 100,000 could have freely chosen to take the vaccines themselves to try to prevent hospitalization and mortality ([Blumenthal et al., 2021](#)). The state has no state interest in forcing a medical treatment on people, only in preventing virus spread. This case is not about hospitalization or mortality but about preventing workplace virus transmission, so these observations are largely irrelevant.

**71:** “Vaccine effectiveness for prevention of symptomatic infection was reduced to about 64% when the Delta variant was circulating.”

These various estimates of vaccine effectiveness were upwardly biased by the initial 7-21-day exclusion periods, which has been demonstrated at length by [Neil et al.](#) Further, if the vaccines were effective at preventing infection, then how did more than 87% of Americans come to be infected with the virus by Q4 2023, according to CDC seropositivity data? That fact empirically shows that on a population basis, the vaccines were not much effective in preventing infection.

**72:** “Some people suggest that instead of relying on data shared by public health authorities, an employer should rely on what it observes in its workplace regarding COVID-19 positive cases and vaccination status to guide its assessment of COVID-19 risks and ways to reduce them. ... To act against these [public health] recommendations is to take a stand against the basic principles of medical science and science in general that underpin all the scientific advances in our society.”

See last paragraph. The whole public health community proclaimed the effectiveness of the Covid vaccines according to its claimed scientific evidence, yet more than 87% of Americans got Covid anyway. Dr. Lynch’s paragraph here is argument by authority and provides no empirical evidence for this case. In fact, because employers saw that appreciable numbers of breakthrough Covid infections were occurring in their vaccinated workers, that would and should have given them absolutely correct motivation to evaluate quantitatively the relative infection burden in their corpus of vaccinated workers compared to their corpus of unvaccinated workers. There was never a zero-Covid possibility and thus the question has always been one of this quantitative risk balance. Yet Dr. Lynch seems to be acting like he is advocating for zero Covid. Worse, he has made no mention of the relative balance of infection risk burdens, which violates the risk-benefit analysis essential and fundamental to public health principles for which he so ardently proclaims authority.

**73:** “Notwithstanding anecdotal observations from a workplace from late 2021 through April 2022, which may not be accurate based on asymptomatic COVID infections, an unvaccinated person was still more likely than a fully vaccinated person to contract and transmit COVID, and to experience serious illness or death from COVID.”

This assertion is wrong for multiple reasons. First, both CDC and Washington State Department of Health have made public their large population datasets showing how great the cumulative breakthrough infection risks were over 2021 through 2022 (cited in my report and above). These are not “anecdotal observations from a workplace.” “Anecdotal” refers to observations about a person or two. Thus, the term as used here is derogatory and not scientific. Second, the risks individual-by-individual, to which Dr. Lynch is referring, are not relevant because there were tremendously more vaccinated than unvaccinated individuals, and EEOC guidelines (of which Dr. Lynch seems unaware) state explicitly that totalities of infection risk burdens are involved in the evaluation of exemptions and accommodations, not individual-level risks per se. Finally, whether infections are asymptomatic, minimally symptomatic, fully symptomatic, etc. applies equally to recognition of infection in both unvaccinated and vaccinated workers.

**74:** “I am aware that some people have expressed opposition to receiving the COVID-19 vaccines based on the use of HEK293 cells in the development or testing of the Pfizer and Moderna vaccines.”

For some reason, Dr. Lynch has omitted the salient point that that this immortalized cell line was grown from tissue taken from an aborted fetus. Apparently, there has been some recent—though uncertain—claim that the original source may not have been an aborted fetus but a miscarried one, however the traditional understanding was an abortion as the source. This has religious implications for some people. The whole point of Dr. Lynch writing this paragraph about HEK293 cells, without stating that the reason for the opposition is religious in nature, shows that he is not being forthright in characterizing this point.

Furthermore, it does not matter what other medications may or may not have been developed and used with involvement of HEK293 cells. To say that aspirin and acetaminophen have involved HEK293 cells when these medications had been in widespread common use for decades before HEK293 cells were even created in 1973 is absurd. Dr. Lynch would need to demonstrate that all available supplies of these medications had benefitted from use of HEK293 cells in order to lay claim that Covid vaccine religious objectors may not have avoided use of these products in the past. He has not done this. Further, there is likely no evidence that even had such use occurred, the involvement of HEK293 cells would have been known to most lay users.

**75:** “I am also aware that some people have expressed the opinion that COVID-19 vaccines contain neurotoxins, hazardous substances, attenuated viruses, animal parts, foreign DNA, albumin from human blood, carcinogens, and chemical wastes that are proven harmful to the human body. ... These vaccines do not contain any of these materials and have been proven repeatedly to be safe and not harmful to the human body.”

I cite above at par. 18, published scientific evidence contradicting Dr. Lynch's unreferenced and unsupported claim here.

**76:** “Dr. Francis Collins, a former director of the National Institutes of Health, wrote in the New York Times recently, “Future historians will judge the development of safe and effective mRNA vaccines for COVID in 11 months as one of the greatest medical achievements in human history.”

It doesn't matter what Francis Collins (of the infamous “this proposal from the three fringe epidemiologists [Bhattacharya, Gupta and Kulldorff] demanded a quick and devastating published take down.”) says. Beliefs of people are not scientific evidence. Collins has publicly acknowledged



the massive harms inflicted by the Covid-19 public health policies, including those that he himself pushed ([Sullum, 2024](#)).

**77:** “On August 9, 2021, Governor Inslee issued an emergency proclamation which prohibited state executive branch employees, on-site contractors, volunteers, and all public and private health care and long-term care workers from working after October 4, 2021, without being fully vaccinated against COVID-19.”

This is not correct. It omits that the proclamation allowed for medical and religious exemptions to the vaccination and accommodations for these reasons. Additionally, the deadline date was October 18, 2021, not October 4th as Dr. Lynch says.

**78:** “Importantly, any benefit of infection-mediated immunity is limited as these benefits are available only to those who did not die due to COVID.”

This illogical reasoning is absurd. None of the Plaintiffs died. Neither did most of the 300 million Americans who have had Covid and have degrees of Covid-19 immunity.

**78:** “At the time of the vaccine mandate the role of prior immunity was unclear.”

This is not true. There were two dozen studies on post-infection natural Covid-19 immunity published by mid-2021 which I discuss above at par. 31.

**78:** “there was no “acceptable” level of antibodies due to past infection that indicated a level of protection.”

This assertion is logically irrelevant. The fact of having had Covid infection is itself evidence of immunity. Antibody levels can wane, but immunity stays longer. See par. 31 above.

**78:** “Throughout the acute phase of the pandemic, it was unknown what the next variant was going to be like and concern remained high that future variants were going to be more dangerous and be able to bypass infection-mediated immunity.”

This assertion applied equally or more so to vaccine-based immunity and was apparent as soon as breakthrough infections began to be recognized, March 2021 or earlier.

**79-82:** Regular testing strategies, distancing, PPE etc. are inadequate to control spread of the infection.

I agree with this reasoning, but it is irrelevant for evaluating supposed risks posed by the Plaintiffs in the workplace. Further, all of the non-vaccine strategies for infection control were still considered as appropriate in the fall 2021 timeframe. Dr. Lynch cannot object now, based on current evidence, to general Covid-19 policies that were in widespread use in fall 2021.

**79-82:** “No combination of nonpharmaceutical interventions has been shown to be equivalent to vaccination.”

This is untrue. Post-infection natural immunity is as good and durable, or better, than vaccination.

**83:** “Plaintiffs allege in the Amended Complaint that WDFW did not accommodate them in their then-current jobs. I conclude that allowing Plaintiffs to work unvaccinated would pose an undue hardship on the WDFW by negatively impacting workplace safety and posing a threat to the health and safety of employees and their families, the community, visitors, and others who spend time in WDFW facilities or interact with WDFW employees. There are no adequate alternatives to vaccination in this context.”

Is Dr. Lynch also an attorney? He has no claim of legal expertise on which to base his assertion of “undue hardship.” Further, Dr. Lynch does not address any of the EEOC guidelines for evaluating undue hardship. This statement is hypothetical and unquantified and violates the EEOC guidance prohibiting speculative or hypothetical assertions of risk.

Just because on average, an individual Plaintiff would have created higher individual infection risk in the workplace compared to a single vaccinated employee does not mean that such a risk would have been inordinate, because of the much larger numbers of breakthrough infections estimated to occur among the body of vaccinated employees. There was no possibility of “zero-Covid” and thus a calculation of risk balance between vaccinated and unvaccinated employees needed to have been done. However, such a calculation was not done, not by WDFW, not by Washington Department of Public Health for WDFW, and not by Dr. Lynch.

Dr. Lynch’s statement does not examine the same outcomes as caused by breakthrough infections of vaccinated employees, an infection burden that would have been larger than that created by the religious exemption employees had they remained working.

**84:** “it is my opinion that in the period that WDFW denied Plaintiffs’ accommodation requests and separated them from employment, an unvaccinated person posed materially higher risks of transmitting COVID-19, including increasing the potential for causing an outbreak, contracting COVID-19, and developing severe disease, compared with a vaccinated person.”

See previous paragraph responses. This argument violates the EEOC guidelines concerning evaluation of the totality of infection burden among vaccinated and unvaccinated employees.

**85:** Same issue as previous two paragraphs.

**87:** “While transmitting COVID-19 to a co-worker implicates serious issues, including the outcomes of infection in that person, and the transmission from that person to other people in their lives (including potentially higher risk family members), transmitting COVID-19 to an unsuspecting child, member of the community, or a person who has been arrested, and who therefore does not have the ability to take additional precautions to protect themselves, implicates potentially even greater issues.”

Even incarcerated people could have been vaccinated if they chose to. The implication of “serious issues” is a nonsensical claim because 99,999 out of 100,000 people could have freely chosen to try to protect themselves by getting vaccinated. This whole statement is speculative and hypothetical, which is prohibited by the EEOC guidelines.

**88:** “it is my opinion that, had WDFW allowed Plaintiffs to continue their employment unvaccinated, it would have significantly increased the risk that Plaintiffs would infect coworkers, other WDFW employees, and members of the public with COVID-19.”

“Significantly” is not a quantitative amount and has no statistical meaning denoting any aspect of magnitude of amount. The claim of some increased risk is most likely true, but even if all of the Plaintiffs had gotten Covid while employed, their combined risk would have been less than the risk of breakthrough infections among the totality of the vaccinated employees, a risk that WDFW took in stride, in particular by not mandating vaccine booster doses. See also responses to par. 83.

I reserve the right to review additional materials and supplement my opinions if necessary.

My fee is \$600 per hour.



Date: January 10, 2025

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Harvey A. Risch, M.D., Ph.D.

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